Contribution to the knowledge of the hawkmoths fauna in the state of Santa Catarina, Brazil (Lepidoptera: Sphingidae)

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Abstract: Aiming to contribute to the knowledge of hawkmoths fauna (Lepidoptera: Sphingidae) which occur in the state of Santa Catarina, a list of species collected within 50 years by several researchers was compiled. 51 species were related, corresponding to 24% of the Sphingidae fauna estimated to Brazil, distributed in Macroglossinae (33), Smerinthinae (4) and Sphinginae (14).

Keywords: diversity, neotropical, moths.

Beitrag zur Kenntnis der Sphingidenfauna im Bundesstaat Santa Catarina, Brasilien (Lepidoptera: Sphingidae)

Zusammenfassung: Mit dem Ziel, zur Kenntnis der im Bundesstaat Santa Catarina vorkommenden Sphingidenfauna (Lepidoptera: Sphingidae) beizutragen, wurde eine Liste der von zahlreichen Forschern in einem Zeitraum von ungefähr 50 Jahren gesammelten Arten zusammengestellt. Es wurden 51 Arten aufgelistet. Das entspricht 24% der für Brasilien geschätzten Sphingidenfauna, die sich in die Unterfamilien wie folgt aufteilen: Macroglossinae (33), Smerinthinae (4) und Sphinginae (14).

Contribuição para o conhecimento da fauna de esfingídeos do estado de Santa Catarina, Brasil (Lepidoptera: Sphingidae)

Resumo: Com o objetivo de contribuir para o conhecimento da fauna de esfingídeos (Lepidoptera: Sphingidae) ocorrentes no estado de Santa Catarina elaborou-se uma lista de espécies coletadas num período de aproximadamente 50 anos por inúmeros pesquisadores. Foram relacionadas 51 espécies, o que corresponde a 24% da fauna de Sphingidae estimada para o Brasil, estando distribuídas em Macroglossinae (33), Smerinthinae (4) e Sphinginae (14).

Introduction

Sphingidae is among the main families of moths used in studies of ecosystems (Hilty & Merelender 2000), playing an important role in the pollination of many species of sphingophilous plants (Darrault & Schlindwein 2002).

The family comprises about 1300 species distributed worldwide, where its biggest concentration is in the tropical regions (Kitching & Cadiou 2000, Moré et al. 2005). From Brazil, 210 species have been recorded (Duarte et al. 2008). In the south of the country, the hawkmoths fauna is relatively well-known in the states of Rio Grande do Sul (Biezanko 1948, 1982a, b, Carvalho et al. 1978, Corseuil et al. 2001, Mabilde 1896, Oliveira et al. 1999, Specht et al. 2008, Weymer 1894) and Paraná (Biezanko 1932, Laroca & Mielke 1975, Laroca et al. 1989, Marinoni et al. 1999). However, the only record that is known about Sphingidae in the state of Santa Catarina was published by Biezanko & Pitoñ (1941), where the authors recorded only 12 species to the county of Itaiópolis.

Due to little register about the hawkmoths fauna in Santa Catarina, the aim of this work is to present a list of species collected in several counties in the state, to broaden the knowledge about it.

Material and methods

Several researchers did the collecting, within a period of approximately 50 years. There is no information about the methodology used.

Some species collected in Itaiópolis were sent to Cornell University, Ithaca, New York, according to Biezanko & Pitoñ (1941). The others are deposited at the Museu Entomológico Ceslau Biezanko da Universidade Federal de Pelotas (UFPEL), Rio Grande do Sul, Brazil.

The locations with the biggest number of Sphingidae species collected are:

County Blumenau (26°55′ S, 49°3′ W, altitude ca. 21 m). Typical Dense Ombrophilous Forest vegetation. Average temperature: 19°C. Type of weather: Cwa, according to Köppen's classification (gaplan 1986). All examples were collected within a period of approximately 25 years by C. M. Biezanko.

County Brusque (27°5′ S, 48°55′ W, ca. 21 m). Typical Dense Ombrophilous Forest vegetation. Average temperature: 16°C. Type of weather: Cwa, according to Köppen's classification (gaplan 1986). All examples collected in the 1960's by Vitor O. Becker.

County Itaiópolis (26°20′ S, 49°54′ W; ca. 925 m). Typical Rain Forest and Grassland vegetation. Average temperature: 16°C. Type of weather: Cfb, according to Köppen's classification (gaplan 1986). The hawkmoths were sampled by João Pitoñ.

County Seara (27°8′ S, 52°18′ W; ca. 550 m). Typical Decidual Forest vegetation. Average temperature: 20°C. Type of weather: Cfa, according to Köppen's classification (gaplan 1986). The examples were collected in the 1960's and 1970's by Fritz Plaumann.

Balneário Camboriú (26°59′ S, 48°38′ W, ca. 2 m), Concórdia (27°14′ S, 52°1′ W; ca. 550 m), Ituporanga (27°24′ S, 49°36′ W; ca. 370 m), Joinville (26°18′ S, 48°50′ W; ca. 4 m), Ponte Serrada (26°52′ S, 52°0′ W; ca. 1067 m), Trombudo Central (27°17′ S, 49°47′ W; ca. 350 m) and Tijucas (27°14′ S, 48°38′ W; ca. 2 m) had their samples taken occasionally, but were included as a complement to the geographical distribution.

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Fig. 1: The Brasilian state of Santa Catarina, with collecting localities (cities, municipalities).

The data obtained by Biezanko & Pitoñ (1941) were also included to complement the list, identified in Tab. 1 as ITA.

The identification was made by professors Ceslau Maria Biezanko and Dr. Vitor Osmar Becker. The work of Seitz (1915–1925) and Moré et al. (2005) was used to confirm such identification, and the taxonomy was updated according to Kitching & Cadiou (2000).

The species are found listed in alphabetical order and divided in subfamilies and tribes.

The counties mentioned before follow the abbreviations below:

BC Balneário Camboriú
BL Blumenau
BR Brusque
CO Concórdia
IA Itaiópolis
IU Ituporanga
JO Joinville
PS Ponte Serrada
SE Seara
TC Trombudo Central
TI Tijucas

Results

A total of 51 species of Sphingidae were listed, being distributed into Macroglossinae (33 species), Smerinthinae (4 species) and Sphinginae (14 species) (Tab. 1), representing 24 % of all hawkmoths fauna estimated for Brazil.

Specht et al. (2008) have currently registered 84 species of hawkmoths in the state of Rio Grande do Sul due to bibliographical review and collecting of material between 2004 and 2005, with no location described; in Paraná, Marinoni et al. (1999) registered 55 species of Sphingidae in eight counties. Duarte et al. (2008) registered 75 species of Sphingidae in the Estação Biológica de Boracéia, São Paulo, a result of 64 years of collecting.

Comparing the data obtained in other Brazilian states with the number of species of hawkmoths sampled in Santa Catarina, one may come across the possibility of having a significant raise in the number of new records of species, due to the shortage of fauna inventory in that state.

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Tab. 1: List of species of hawkmoths (Lepidoptera: Sphingidae) collected in the state of Santa Catarina, Brazil. Abbreviations see text.

Sphingidae	Municipalities
Macroglossinae, Dilophonotini	
Aellopos ceculus (Cramer, 1777)	BL
Callionima innus (Rothschild & Jordan, 1903)	BC, BL, BR
Callionima nomius (Walker, 1856)	BR
Callionima parce (Fabricius, 1775)	BL, BR
Enyo cavifer (Rothschild & Jordan, 1903)	BL
Enyo gorgon (Cramer, 1777)	BL
Enyo japix descrepans (Walker, 1856)	BL
Enyo lugubris (Linnaeus, 1771)	BL, ITA
Enyo ocypete (Linnaeus, 1758)	BR
Erinnyis alope (Drury, 1770)	BL, BR, ITA
Erinnyis crameri (Schaus, 1898)	BL
Erinnyis ello (Linnaeus, 1758)	BL, BR, ITA
Erinnyis obscura (Fabricius, 1775)	BR
Madoryx plutonius plutonius (Hübner, [1819])	BR
Madoryx oiclus (Cramer, 1780)	BL
Nyceryx alophus (Boisduval, [1875])	SE
Pachylia ficus (Linnaeus, 1758)	JO
Pachylioides resumens (Walker, 1856)	BR, JO
Pseudosphinx tetrio (Linnaeus, 1771)	BL
Macroglossinae, Macroglossini	
Xylophanes ceratomioides (Grote & Robinson, 1967)	BL, BR
Xylophanes chiron (Drury, 1771)	BL, BR, ITA, ITU
Xylophanes fosteri Rothschild & Jordan, 1906	SE
Xylophanes hydrata Rothschild & Jordan, 1903	BR
Xylophanes indistincta Closs, 1915	SE
Xylophanes isaon (Boisduval, [1875])	ITA
Xylophanes pluto (Fabricius, 1777)	SE
Xylophanes porcus continentalis Rothschild & Jordan, 1903	BL, BR
Xylophanes tersa (Linnaeus, 1771)	ITA
Xylophanes thyelia (Linnaeus, 1758)	BL, SE
Xylophanes titana (Druce, 1878)	SE
Xylophanes tyndarus (Boisduval, [1875])	SE
Macroglossinae, Philampelini	
Eumorpha anchemolus (Cramer, 1780)	BL, ITA, JO
Eumorpha satellitia analis (Rothschild & Jordan, 1903)	BL, BR, ITA
Smerinthinae, Ambulycini	
Adhemarius eurysthenes (R. Felder, 1874)	PS, TC
Adhemarius gannascus (Stoll, 1790)	BR, ITA
Adhemarius palmeri (Boisduval, [1875])	BL, BR, JO
Protambulyx strigilis (Linnaeus, 1771)	BL, BR
Sphinginae, Sphingini	
Cocytius antaeus (Drury, 1773)	CO
Cocytius beelzebuth (Boisduval, [1875])	BL, BR
Cocytius duponchel (Poey, 1832)	BL, BR, JO
Cocytius lucifer Rothschild & Jordan, 1903	BL, SE
Manduca albiplaga (Walker, 1856)	SE
Manduca diffissa petuniae (Boisduval, [1875])	ITA, SE
Manduca florestan (Stoll,1782)	JO, SE
Manduca incisa (Walker, 1856)	JO
Manduca lefeburei (Guérin-Méneville, [1844])	BR
Manduca lucetius (Cramer, 1780)	SE
Manduca rustica rustica (Fabricius, 1775)	BR, ITU
Manduca sexta paphus (Cramer, 1779)	ITA
Neococytius cluentius (Cramer, 1775)	TI
Sphinx justiciae Walker, 1856	ITA, SE

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Corrigendum

Zu: Nardelli, U. (2010): **Eine erfolgreiche Zucht von *Coscinia libyssa caligans* Turati, 1907 unter Freilandbedingungen in Norditalien (Lepidoptera, Arctiidae).** — Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **30** (4): 199–204.

Leider hat sich ein systematischer Schreibfehler durch diese Arbeit konsequent „durchgeschlichen“:

Überall im Text steht falsch „*Coscinia libyssa liounvillei*“; die richtige Schreibweise für dieses Taxon ist aber

liouvillei Le Cerf, 1928,

also ohne das „*n*“. Dank an V. V. Dubatolov, Novosibirsk, für diesen Hinweis.

wng.

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